# Dell Wyse Z class

Built for when performance matters most.

Dell Wyse Z class:
All you need to know. Here:

# Introducing the Dell Wyse Z class

## Built for when performance matters most

## Dell Wyse Z class

The Dell Wyse Z class brings unrivalled high performance to users demanding more from their virtual desktops. Seven models are available featuring Dell Wyse Enhanced SUSE Linux, Windows Embedded Standard 2009 and Windows Embedded Standard 7 operating systems, and a cloud PC for use with Dell Wyse WSM.

## Thin clients

### Z50S

Featuring Dell Wyse Enhanced SUSE Linux Enterprise, the industry's only enterprise-quality Linux OS optimized by Dell Wyse for thin computing.

### Z50D

Highest performing dual-core thin client with all the security, flexibility, and market-leading usability of Dell Wyse Enhanced SUSE Linux Enterprise.

### Z90SW

High performance Windows Embedded Standard 2009 thin client for the most demanding Virtual Desktop Environments.

vmware READY HDX

### Z90DW

Highest-performing dual-core thin client based on Windows Embedded Standard 2009.

vmware READY HDX

### Z90S7

High performance thin client. Harnesses the rich user experience of Windows Embedded Standard 7.

vmware READY HDX RemoteFX Enabled

### Z90D7

High performance dual-core thin client based on Windows Embedded Standard 7.

vmware READY HDX RemoteFX Enabled

### Z90DE7

High performance dual-core thin client based on Windows Embedded Standard 7 with expansion capabilities through a PCIe expansion slot.

RemoteFX Enabled

### Z00D

Highest-performing dual-core cloud PC for Dell Wyse WSM.

**Cloud PC**

# **Features** Dell Wyse Z class

**New Dell Wyse Z class is the ideal high performance cloud client that's perfectly suited to users who're increasingly demanding more from their virtual desktop environments – as well as the traditional cloud client benefits of security and management.**

Featuring fast processing, accelerated graphics and multimedia, fast and flexible user connectivity and excellent energy-efficiency never seen before in a cloud client, new Dell Wyse Z class delivers uncompromising high performance when users need it most.

Dell Wyse Device Manager supports Dell Wyse Z class with scalable enterprise-wide management including simple deployment, patching and updates and asset management – all with secure end-to-end encrypted communications.

Like all Dell Wyse cloud clients, new Dell Wyse Z class is one cool operator. Its energy efficient processor – which out-performs other more power hungry alternatives – and silent fan-less design, all contribute to lowering an organization's carbon footprint through power usage and emissions that are a fraction of traditional PC desktops.

## Cloud Clients

Performance

Connectivity

Z90DE7 Connectivity

Mounting options

Green

EarthSmart Computing

Dell Wyse Enhanced SUSE Linux

suse

Microsoft Windows Embedded Standard 2009

Windows Embedded Standard 2009

Microsoft Windows Embedded Standard 7

Windows Embedded Standard 7

## Software

Thin client Management

Dell Wyse WDM

Cloud PC Provisioning

Dell Wyse WSM

User Experience Optimization

User Experience Acceleration

Take a tour of the Dell Wyse Z class range

# **High Performance** cloud client

## When performance matters most

**Fast processing**
**Accelerated graphics and multimedia**
**Fast and flexible user connectivity**
**Excellent energy-efficiency**

From the instant the new Dell Wyse Z class boots up it delivers everything that today and tomorrow's users need in order to tackle the most demanding virtual desktop environments.

At its heart beats the very latest single or dual core AMD G-Series Accelerated Processing Units or APUs, where all the processing, graphics and HD video tasks are performed on the same piece of silicon. Giving a dramatic leap in user experience and the ideal platform to reap the benefits of Dell Wyse cloud, virtualization and management software.

**Processor**

The AMD Embedded G-Series platform is the world's first low power processor and advanced GPU that's integrated into a single embedded Accelerated Processing Unit (APU).

SUPERSPEED USB

abg WiFi n CERTIFIED

AMD **Fusion**
FAMILY OF APUs
EMBEDDED TECHNOLOGY

## High definition multimedia experience

Display, manipulate and work with stunning high definition multimedia graphics, voice and video in virtual desktop environments that are ready for Unified Communications. That's the promise the Dell Wyse Z class more than delivers on, with great performance across 2D, 3D and HD video applications. Its new design takes them all in its stride and is the first to include hardware accelerated DirectX® 11 graphics with OpenGL 4.0 and OpenCL™ support.

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# **Connectivity** Fast and flexible

## Dell Wyse Z50S & Z50D, Z90SW & Z90DW, Z90S7 & Z90D7 thin clients and Z00D cloud PC.

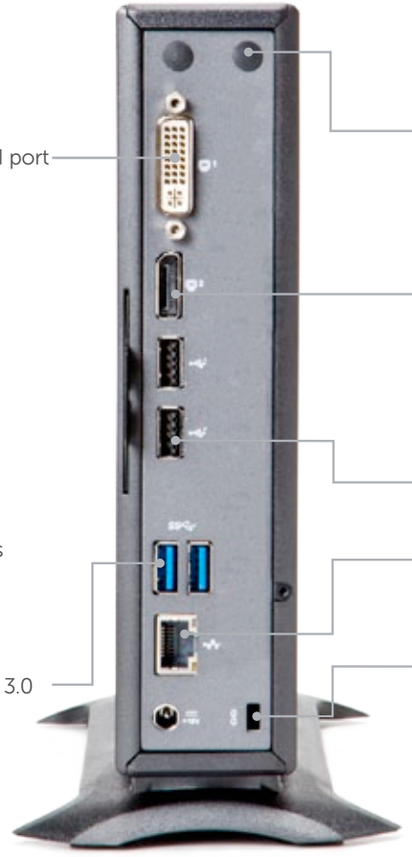
### Standard configuration

Output:
Digital audio

Input:
8 bit stereo
microphone

2 USB 2.0 ports

**Front of device**



DVI-I port

Dual Band 802.11
a/b/g/n Wireless
(factory option)

DisplayPort

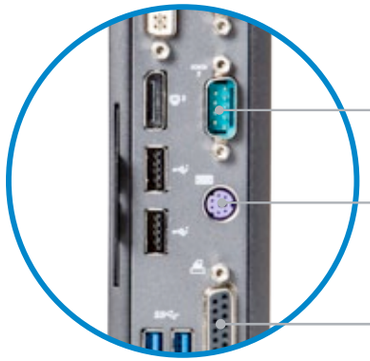
2 USB 2.0 ports

10/100/1000 Base-T Gigabit
ethernet port

Kensington lock slot

2 USB 3.0
ports

### Legacy connectivity option



2 serial ports

PS/2 port

Parallel port for
printer connection

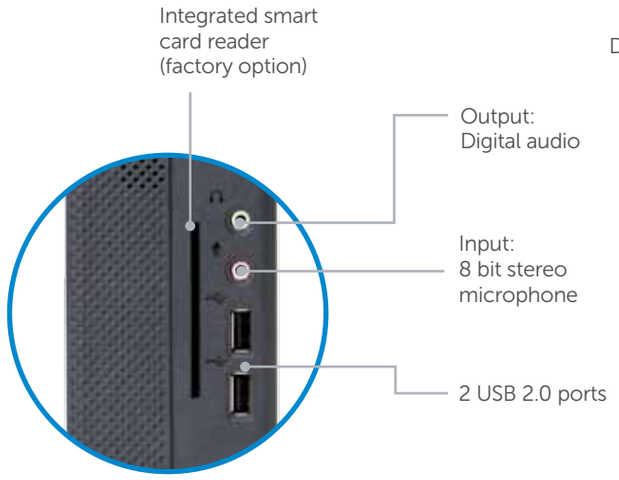
Some features require local OS support and may not be available with all OSs.

Continue tour

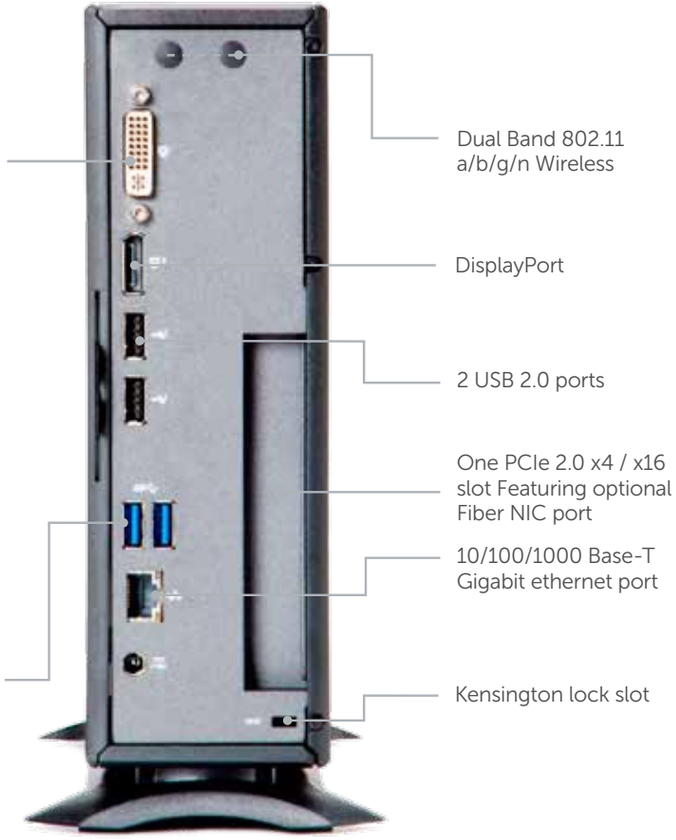
# **Connectivity** Extreme flexibility

## Dell Wyse Z90DE7 thin client.

### Standard configuration




Front of device


DVI-I port
DVI to VGA adapter included
2 USB 3.0 ports
Dual Band 802.11 a/b/g/n Wireless
DisplayPort
2 USB 2.0 ports
One PCIe 2.0 x4 / x16 slot Featuring optional Fiber NIC port
10/100/1000 Base-T Gigabit ethernet port
Kensington lock slot

AMD Fusion FAMILY OF APUs EMBEDDED TECHNOLOGY

SUPERSPEED USB

### Legacy connectivity option

Continue tour

# Mounting options

The Dell Wyse Z class family can be placed vertically or horizontally on desktops, mounted to walls and even behind monitors.

## Horizontal

Optional feet enable Dell Wyse Z class to be used horizontally.

## Back of monitor or wall mounting

An optional VESA mount bracket enables mounting to the rear of a monitor (this requires the four industry standard mounting points to be free). The same bracket can be used for wall mounting.

## Vertical

Each Dell Wyse Z class is supplied as standard with feet for vertical use.

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# **Green computing** without compromise

EarthSmart Computing™

## That's Dell Wyse EarthSmart computing

Dell Wyse Z class models are compliant with ENERGY STAR Version 5.0 Thin Client specification, a recognized sign of energy efficiency. Through our EarthSmart Computing initiative we are committed to helping organizations implement a greener computing strategy – one that delivers a more efficient and productive computing experience for your users with a positive effect on energy wastage, heat and carbon emissions.

### Green power

Dell Wyse Z class cloud clients use between 12 and 15 watts of power in typical use*. In comparison, a typical PC would use between 70 and 150 watts.Even in sleep made Dell Wyse Z class units draw just 2 watts while being fully remotely managed.

Then, when you include additional power requirements in the data center, a cloud computing deployment will deliver power savings of between 50 and 90%.

Dell Wyse has implemented an ISO 14001-based environmental management system and WEEE recycling processes, and all Dell Wyse products meet stringent ROHS requirements.

Dell Wyse has implemented an ISO 14001-based environmental management system and WEEE recycling processes, and all Dell Wyse products meet stringent ROHS requirements.

### Learn more

Download carbon calculators, fact sheets and white papers from here: **www.wyse.com/green**

*Average power usage with device connected to 1 keyboard, 1 PS/2 mouse, and 1 monitor. Z90DE7 can use up to 35 watts with the expansion slot occupied and operational.

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# Operating Systems Dell Wyse enhanced SUSE Linux

**Dell Wyse enhanced SUSE Linux Enterprise is a simple, secure, and easy to manage platform designed for customers looking for flexibility and support of the latest protocols (ICA, PCoIP, RDP, etc) without the need for a Windows-based thin client.**

### Simple "Hands-Off" Management.

Deploying, managing, and updating Dell Wyse enhanced SUSE Linux is easier than any other Thin-Linux distribution, Period. Utilizing Dell Wyse's proven automatic update and configuration approach, management tasks can be handled centrally and easily without any management software required.

Updating 1 or 1,000 thin clients is as simple as dragging and dropping a file into a folder. For customers that desire a little more hands-on approach (such as asset tracking, reporting, etc) then integration with Dell Wyse Device Manager is built-in.

### Security.

Dell Wyse enhanced SUSE Linux is designed with security in mind. IT Managers are able to provide a locked-down experience, smartcard login to virtual environments, VPN connectivity, and leverage a read-only file system that protects against data loss, theft and virus attacks.

## Enterprise-quality Linux optimized by Dell Wyse

Dell Wyse enhanced SUSE Linux is the only enterprise-quality Linux platform optimized for thin computing, created by combining the security and flexibility of SUSE Linux with Dell Wyse's cloud client computing leadership and innovation in user experience and simplified management. Additionally, SUSE Linux Enterprise is the only Linux platform to protect customers from potential IP infringement suits as it is jointly indemnified by SUSE Linux and Microsoft.

### Flexible, Multi-Protocol Support.

Being built from a standard enterprise-quality Linux distribution means the Dell Wyse enhanced SUSE Linux supports a wide range of protocols and infrastructures straight-out-of-the-box including Citrix, Microsoft, VMware and Ericom PowerTerm InterConnect Terminal Emulation – allowing you to mix-and-match connections from a single image.

### That's Dell Wyse enhanced SUSE Linux.

The only enterprise-quality Linux platform optimized by Dell Wyse for thin client computing.

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# Operating Systems Microsoft WES 2009

## Running Windows Embedded Standard (WES) on Dell Wyse thin clients gives IT departments the ability to deploy fully functional desktop clients with better manageability and significantly lower total cost of ownership than personal computers.

Dell Wyse WES 2009-based thin clients can run 32 bit Microsoft Windows applications, either locally or from servers, with the inbuilt flexibility to add and support a host of desktop peripherals with permission from the IT administrator.

Full support is provided for RDP 7.0, Citrix ICA 11.2, VMware View 4.0.1, Ericom PowerTerm WebConnect, Ericom PowerTerm InterConnect Terminal Emulation and Internet Explorer 8. In addition, all Dell Wyse Windows Embedded Standard 2009 thin clients include support of Windows Embedded Device Manager (WEDM), allowing the device to be managed by Microsoft's central management system for Windows-based devices, System Center Configuration Manager (SCCM)*.

**Secure write-protected thin client desktops**

This robust and flexible operating system is further enhanced by the Dell Wyse file-based Write Filter that enables you to protect the files, folder and/or entire volumes from accidental changes or user customization. On rebooting, the thin client simply returns to its original state thus preventing any possible damaging modification either from users or malware.

Windows® Embedded Gold Partner

Windows® Embedded Standard 2009

## Dell Wyse customized image support

Dell Wyse technicians are prepared to help you customize Windows Embedded Standard 2009 to your exact requirements in order to create custom-built images for subsequent enterprise-wide deployment, management and update through Dell Wyse Device Manager.

**Contact your Dell Wyse Partner for further details**

*WES 2009 support for SCCM-WEDM will be available in April 2012.

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# Operating Systems Microsoft WES 7

**New Windows Embedded Standard 7 (WES 7) delivers a wealth of enhanced deployment, user experience and management benefits to Dell Wyse desktops, mobiles and thin clients deployed across an organization's virtualized network.**

### Richer user experience

Wherever they are – deskbound or mobile – with Microsoft Windows Embedded Standard 7 your users can benefit from the rich user experience of the Aero interface and the power, familiarity and reliability of the Windows 7 operating system in a highly customizable and componentized form.

Full support is provided for Remote Desktop Protocol (RDP) 7.1 with RemoteFX technology to provide seamless connectivity to Windows Server 2008 R2 and virtual desktop infrastructure scenarios. The Dell Wyse-enhanced WES7 platforms include additional features supporting the latest Citrix Online Plug-in and VMware View 4.6 to fit the needs of your most sophisticated users and making it an optimum OS for organizations wanting broad support for Cloud computing and desktop virtualization. Citrix Online Plug-in provides the HDX user experience and View 4.6 provides localization and Virtual Printing.

The platform also features additional Windows technology innovations to drive rich, immersive user experiences, including Internet Explorer 8. There's full support and inbuilt flexibility too, to add and support a host of desktop peripherals with permission from the IT administrator.

In addition, all Dell Wyse Windows Embedded Standard 7 thin clients include support of Windows Embedded Device Manager (WEDM), allowing the device to be managed by Microsoft's central management system for Windows-based devices, System Center Configuration Manager (SCCM).

Windows® Embedded Gold Partner

Windows® Embedded Standard 7

## Easier to manage and deploy

Now, with WES7, deploying 32-bit capable thin clients is easier and more manageable than ever before and reflects the direct working relationship between Dell Wyse and Microsoft. The support for Domain Join and group policies through Active Directory, help with management and integration of thin clients into existing desktop management infrastructures.

Dell Wyse Configuration Manager delivers unprecedented simplicity to the management of virtual desktops by allowing IT departments to auto-configure thin clients running Dell Wyse-enhanced Windows Embedded Standard. By automating the deployment of WES thin clients throughout a private cloud WCM offers multiple benefits to organizations: reducing the need to do imaging, deploying custom images and faster configuration updates. Client devices are updated with the latest configuration settings for VDI connections (RDP, Citrix, VMware View), device settings and OS configuration automatically when devices startup.

Dell Wyse Device Manager (WDM) addresses key management requirements. With its centralized management and administration, WDM helps IT departments deliver more effective remote thin client support while minimizing end user downtime. In addition, the Dell Wyse USB Firmware Tool allows IT and Customer Service staff to quickly and easily image the devices directly.

### Enterprise-wide consistency

Dell Wyse Embedded Standard 7 and Dell Wyse provide the ideal, cost effective opportunity to deploy a consistent, high performance operating system across Dell Wyse cloud clients.

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# Thin Client Management Dell Wyse Device Manager

Dell Wyse Device Manager (WDM) addresses key management requirements for deploying powerful thin clients. With its centralized management and administration WDM helps IT departments deliver more effective remote thin client support while minimizing end user downtime.

**Security is assured with HTTPS based imaging, updates and downloads.**

## WDM delivers organization-wide benefits:

| | |
|---|---|
| **Operations** | Centralized management.<br>Collect and organize asset information. |
| **Administration** | Health status reports.<br>Automated client settings.<br>Update client firmware and add applications. |
| **End User IT Costs** | Easier more effective remote support.<br>Create custom scripts and packages. |
| **Minimize downtime** | Restart or reset thin clients in less than a minute.<br>Enforce policies. Minimize user errors. |

Dell Wyse WDM

## At a glance features

- **Security**
  HTTPS Based Imaging / Updates
  Fully Encrypted Network Traffic
  Delegated Admin Access (MS AD) Support
- **No-Hassle Deployment**
  Complete Device Imaging / Patching / Updates
  Bandwidth Throttling for Efficiency / Reliability
  Software Updates and Add-ons
- **Device Administration and Monitoring**
  Device Health Status / Reporting
  Remote Shadowing / Control
  Default Device Configuration
- **Reduce End User IT Costs**
  Reduce energy consumption with scheduled up/down times
- **Scalability**
  Distributed Architecture
  Microsoft SQL Database Support
  Multiple Remote Repository Support
- **Complete Asset Visibility**
  Automated device discovery
  Detailed Hardware Asset information
  Installed Software Asset information

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# Cloud PC Provisioning Dell Wyse WSM

**Enterprise computing from the cloud is here.**
**Whatever you want. Wherever you need it.**

That's the thinking behind Dell Wyse WSM. It's a dynamic on-demand streamed computing environment where everyone gets their preferred operating systems, applications, user data and documents: Wherever they are and whenever they need them.

And Dell Wyse WSM goes beyond the traditional VDI model too – with full support for mobile workers and remote branch offices. Dell Wyse WSM effectively changes the rules on what's possible and opens up the benefits of high performance desktops to enterprise users: Wherever they are.

Dell Wyse WSM

## Better than a PC could ever be

With Dell Wyse WSM users – such as those in the financial or retail industries – are given a fresh computer with their chosen PC operating system, applications and files all preloaded and ready-to-go, every time they sit down and start-up their powerful desktop devices known as Dell Wyse 'cloud PCs'.

Dell Wyse cloud PCs feature powerful processors that enable them to run full PC operating systems and applications locally, while keeping their documents and data secure on central Dell Wyse WSM servers. Enabling existing PC users to continue to use all their familiar operating systems and applications seamlessly - but with greater reliability and better overall performance than a full PC - with the result that many users don't even realize they're using a cloud PC.

And - better still, Dell Wyse WSM features a highly secure, robust and resilient network design that's ideal for remote offices and mission critical deployments such as the defence industry.

**With everything managed, updated, configured remotely and securely, Dell Wyse WSM is everything a PC promises. Minus the headaches.**

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# User Experience Optimization Dell Wyse TCX Suite

with Collaborative Processing Architecture

## Dell Wyse TCX delivers an amazing user experience in one software suite

Dell Wyse TCX Suite of virtualization software enriches the user experience by removing the limitations previously associated with thin clients. It enhances, not replaces, key protocols like ICA/HDX and RDP by adding key features to make each more valuable.

### Multi-display

Ensures application windows and dialog boxes are multi-monitor aware when using more than one monitor.

### USB Virtualization

Enables plug and play peripheral support for virtual desktop environments.

- Redirect and use local USB devices in virtual desktops.
- Deploy virtual desktops to knowledge workers with special device access needs.
- Enable a broad set of USB peripherals including webcams and headsets.

### Multimedia acceleration

Streamlines the delivery of video and audio content to the local client for a rich user experience within a thin client computing architecture.

- Accelerates Mpeg1, Mpeg2, WMV, Mpeg4 Part 2, AC3, AAC, MP3, WAV, WMA media types.
- Collaborative Processing Architecture enhances server scalability, and network utilization by off-loading multimedia rendering to the client.

### Flash acceleration

Flash acceleration helps thin client users to experience improved Flash video performance. While the Flash player continues to run server-side, the resulting images are transcoded and redirected to the client for fast rendering. The technology allows for greater control of frame rate and compression and supports enhanced playback of YouTube-style flash videos in Internet Explorer.

### Bi-directional sound

Enables bi-directional audio in virtual desktop environments, enabling solutions such as VOIP, digital dictation or voice recognition to be deployed.

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# Virtualization Software Dell Wyse VDA

## Removing the barriers of network latency.

Dell Wyse Virtual Desktop Accelerator (VDA) enables virtualized desktop and thin computing environments to be deployed to areas where network latency has, to date, presented operational barriers. Now, with Dell Wyse VDA, more users can receive the full benefits of Dell Wyse thin computing – with the best PC experience over virtualized desktops.

Dell Wyse VDA is a software-only solution for Dell Wyse thin clients and supported PCs that delivers the best user experience for the allocated network bandwidth by neutralizing the effects of network latency and packet loss. Making 'thin' suitable for more remote-site, branch, or field-based users.

Dell Wyse VDA works with instead of replacing existing RDP and ICA protocols, accelerating them by up to 20 times on networks faced with latencies up to and beyond 300ms, and at least 768kbps bandwidth.

## At a glance features

- Software-only acceleration of virtual desktops and applications
- Accelerates existing Citrix ICA and Microsoft RDP protocols
- Works on WANs and 'fat, long pipes'
- Accelerates connections to Citrix XenApp, Citrix XenDesktop, VMware View and Microsoft Terminal Server and Microsoft Hyper-V VDI
- Enhances Dell Wyse TCX software suite functionality across wide-area networks
- Enables Dell Wyse Collaborative Processing Architecture across wide-area networks
- Administrator console provides control of maximum bandwidth per connection
- Leverages built-in security of underlying protocols (128-bit encryption for RDP and ICA).

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# **Technical** Dell Wyse Z class specifications

The Dell Wyse Z class family features Dell Wyse Enhanced SUSE Linux, Microsoft Windows Embedded Standard 2009 and Windows Embedded Standard 7 operating systems, as well as cloud PC software via Dell Wyse WSM.

## Want to learn more? Simply click the relevant icon.

### Cloud clients

**Dell Wyse Z class specifications**

**Dell Wyse Z90DE7 specifications**

Dell Wyse Enhanced SUSE Linux

Microsoft Windows Embedded Standard 2009

Microsoft Windows Embedded Standard 7

### Cloud software

Cloud PC Provisioning

Dell Wyse WSM

# Specifications

Dell Wyse Z50S & Z50D, Z90SW & Z90DW, Z90S7 & Z90D7 thin clients and Z00D cloud PC.

| | |
|---|---|
| **Processors** | AMD G-T52R 1.5 GHz Processor with AMD Radeon™ HD 6310 Graphics<br>Dual core AMD G-T56N 1.65 GHz Processor with<br>AMD Radeon™ HD 6320 Graphics |
| **Memory** | Z50S & Z50D 2GB Flash / 2GB DDR3 RAM<br>Z90SW & Z90DW 2GB Flash / 2GB DDR3 RAM<br>Z90S7 & Z90D7 4GB Flash / 2GB DDR3 RAM<br>Z00D 0GB Flash / 2GB DDR3 RAM<br>Expandable up to 32GB Flash / 4GB DDR3 RAM |
| **I/O peripheral support** | One DisplayPort. (Optional DisplayPort to DVI-I adapter available)<br>One DVI-I port. DVI to VGA (DB-15) adapter included<br>Six total USB ports: Four USB 2.0 ports (two front, two rear) and<br>Two SuperSpeed USB 3.0* ports on rear (backwards compatible with USB 2.0)<br>Enhanced USB Keyboard with Windows Keys (104 keys) and PS/2 mouse port<br>PS/2 Optical mouse included<br>**Factory options:**<br>Legacy connectivity - adds 2 serial ports, 1 parallel port and 1 PS/2 keyboard por |
| **Networking** | 10/100/1000 Gigabit Ethernet<br>**Factory options:**<br>Dual Band 802.11 a/b/g/n Wireless<br>Fiber NIC network connectivity |
| **Display** | VVESA monitor support with Display Data Control (DDC) for automatic<br>setting of resolution and refresh rate<br>DisplayPort: 2560x1600@32bpp<br>DVI-I: 1920x1200@32bpp<br>Dual display: 1920x1200@32bpp |
| **Audio** | Output: 1/8-inch mini jack, full 16 bit stereo, 48KHz sample rate,<br>Digital Audio Out, Internal Mono speaker<br>Input: 1/8-inch mini jack, 8 bit stereo microphone |

| | |
|---|---|
| **Physical characteristics** | Height: 7.87 inches (200mm<br>Width: 1.85 inches (47mm)<br>Depth: 8.85 inches (225mm) |
| **Weight** | 2.47 lbs. (1.12kg) |
| **Mountings** | Vertical feet standard<br>Horizontal feet optional<br>Optional VESA mounting bracket |
| **Device Security** | Built-in Kensington security slot (cable sold separately) |
| **Power** | Worldwide auto-sensing 100-240 VAC, 50/60 Hz.<br>Energy Star V.5.0<br>Phase V external and EuP compliant power adapter<br>Average power usage with device connected to 1 keyboard with 1<br>PS/2 mouse and 1 monitor: Under 15 Watts |
| **Temperature Range** | Operating: 50° to 104° F (10° to 40° C), horizontal and vertical positions<br>Storage : 14° to 140° F (-10° to 60° C) |
| **Humidity** | 20% to 80% condensing<br>10% to 95% non-condensing |
| **Safety Certifications** | German EKI-ITB 2000, ISO 9241-3/-8<br>cULus 60950, TÜV-GS, EN 60950<br>FCC Class B, CE, VCCI, C-Tick<br>WEEE, RoHS Compliant<br>Energy Star & EPEAT Silver certified** |
| **Warranty** | Three-year limited hardware warranty |

* Support for SuperSpeed USB 3.0 is currently not available in Dell Wyse SUSE Linux.

** Z50S and Z50D EPEAT certification is pending.

# **Specifications** Dell Wyse Z90DE7 thin client

| | |
|---|---|
| **Processor** | Dual core AMD G-T56N 1.65 GHz Processor with<br>AMD Radeon HD 6320 Graphics |
| **Memory** | Z90DE7 4GB Flash / 2GB DDR3 RAM<br>Expandable up to 32GB Flash / 4GB DDR3 RAM |
| **I/O peripheral support** | One DisplayPort. (Optional DisplayPort to DVI-I adapter available)<br>One DVI-I port. DVI to VGA (DB-15) adapter included<br>Six total USB ports: Four USB 2.0 ports (two front, two rear) and<br>Two SuperSpeed USB 3.0* ports on rear (backwards compatible with USB 2.0)<br>Enhanced USB Keyboard with Windows Keys (104 keys) and PS2 mouse port<br>PS/2 Optical mouse included<br>**Factory options:**<br>Legacy connectivity - adds 2 serial ports, 1 parallel port and 1 PS/2 keyboard port |
| **Networking** | 10/100/1000 Gigabit Ethernet<br>**Factory options:**<br>Dual Band 802.11 a/b/g/n Wireless<br>Integrated smart card reader |
| **Display** | VESA monitor support with Display Data Control (DDC) for automatic<br>setting of resolution and refresh rate<br>DisplayPort: 2560x1600@32bpp<br>DVI-I: 1920x1200@32bpp<br>Dual display: 1920x1200@32bpp |
| **Audio** | Output: 1/8-inch mini jack, full 16 bit stereo, 48KHz sample rate,<br>Digital Audio Out, Internal Mono speaker<br>Input: 1/8-inch mini jack, 8 bit stereo microphone |

| | |
|---|---|
| **Physical characteristics** | Height: 8.46 inches (215mm)<br>Width: 2.72 inches (69mm)<br>Depth: 8.85 inches (225mm) |
| **Weight** | 3.5 lbs. (1.59kg) |
| **Mountings** | Vertical feet standard<br>Horizontal feet optional<br>Optional VESA mounting bracket |
| **Device Security** | Built-in Kensington security slot (cable sold separately) |
| **Power** | Worldwide auto-sensing 100-240 VAC, 50/60 Hz.<br>Energy Star V.5.0<br>Phase V external and EuP compliant power adapter<br>Average power usage with device connected to 1 keyboard with 1<br>PS/2 mouse and 1 monitor: Under 15 Watts** |
| **Temperature Range** | Operating: 50° to 104° F (10° to 40° C), horizontal and vertical positions<br>Storage : 14° to 140° F (-10° to 60° C) |
| **Humidity** | 20% to 80% condensing<br>10% to 95% non-condensing |
| **Safety Certifications** | German EKI-ITB 2000, ISO 9241-3/-8<br>cULus 60950, TÜV-GS, EN 60950<br>FCC Class B, CE, VCCI, C-Tick<br>WEEE, RoHS Compliant<br>Energy Star and EPEAT Silver certified (pending) |
| **Warranty** | Three-year limited hardware warranty |

* Support for SuperSpeed USB 3.0 is currently not available in Dell Wyse SUSE Linux.

** Can use up to 35 watts with the expansion slot occupied and operational.

# **Software specifications** Dell Wyse enhanced SUSE Linux

| | |
|---|---|
| **Firmware features** | Dell Wyse enhanced SUSE Linux based on SLED 11 SP1<br>Automatic Central Configuration (text-based INI's)<br>Automatic Upgrades (FTP, HTTP, HTTPS)<br>Secure, read-only file system with lockdown abilities<br>Dell Wyse RDP client (RDP7 Compatible)<br>Citrix Online Plugin 11.2 client (ICA 11.2) w/ HDX Mediastream, Plug-n-Play, Realtime, etc.<br>VMware View Open Client compatible with View 4.5<br>Ericom PowerTerm InterConnect Terminal Emulation<br>Ericom PowerTerm WebConnect<br>Cisco, Juniper, Nortel, IPSEC VPN Support (Add-ons)<br>Local/Remote Printing support (CUPS, LPR/LPD, Samba, ThinPrint,etc)<br>Web-based applications (Firefox, Flash, JAVA,etc)<br>XDMCP / SSH |
| **Server OS Infrastructure support** | Citrix XenApp / Citrix Presentation Server<br>Citrix XenDesktop<br>VMware View<br>Microsoft Windows Terminal Server 2003 & 2008 |
| **Keyboard language support** | 100+ Keyboard Layouts supported locally (English, German, Spanish, French, Italian, Dutch, Chinese, Japanese, Turkish) |
| **Management** | Automatic, "hands-off" configuration and upgrading of thin clients without the need for device management software. Optionally, administrators can choose to integrate with Dell Wyse Device Manager (WDM) for more hands-on control:<br>- Complete image upgrade<br>- Wake terminal remotely (Wake-on LAN)<br>- Remote screen shadowing of entire desktop (VNC)<br>- Asset management and reporting |

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| **Wireless support** | WPA Personal, WPA2 Personal, WPA Enterprise<br>WPA Enterprise Authentication support<br>PEAP/TLS: PAP/MSCHAP/MSCHAPV2 support |
| **Dell Wyse TCX Suite** | Advanced support for innovative Dell Wyse TCX Suite virtualization software that both works with and enhances ICA and RDP (instead of replacing them) featuring:<br>- Multimedia acceleration - the power to run rich multimedia files formats ultilizing Dell Wyse Collaborative Processing Architecture (CPA) that intelligently redirects the necessary processing tasks between the thin client and the server.<br>- Multi-display - ensures that windows and dialogue boxes behave the way users expect when using more than one monitor.<br>- USB Virtualization - makes thin client-attached USB devices visible to virtual desktops and applications, with full IT control.<br>- Bi-directional sound - enables virtual desktops and applications to receive and transmit high quality audio without compromise.<br>- Flash acceleration - helps users of thin clients to experience improved Flash performance. |
| **Dell Wyse Virtual Desktop Accelerator** | Dell Wyse Virtual Desktop Accelerator Delivers the best user experience for the allocated network bandwidth. Dell Wyse Virtual Desktop Accelerator neutralizes the effects of network latency and packet loss, making cloud client computing more suitable for more remote-site, branch, or field-based users – and boosts RDP and ICA up to 20 times on networks with latencies up to and exceeding 300ms and at least 768kbps bandwidth. |

# Software specifications Microsoft WES 2009

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| **Firmware features** | Microsoft Windows Embedded Standard 2009<br>Microsoft Internet Explorer 8.0 resident: HTML, JavaScript, XML,<br>Active X Sun JRE, Media Player, Citrix Web Interface<br>RDP 7.0 resident<br>Citrix Online Plugin 11.2 resident (ICA 11.2)<br>VMware View 4.0.1 client resident<br>Ericom PowerTerm InterConnect Terminal Emulation<br>Ericom PowerTerm WebConnect client<br>Windows Media Player 11, .NET 3.5 |
| **Server OS Infrastructure Support** | Citrix XenApp / Citrix Presentation Server / Citrix XenDesktop<br>VMware View<br>Ericom PowerTerm WebConnect<br>Microsoft Windows Terminal Server 2003 & 2008 |
| **Application Framework** | .Net 3.5 |
| **Security** | File Based Write Filter (FBWF)<br>Microsoft Baseline Security Analyzer (MBSA) |
| **Set-up and Configuration** | Boot from local flash<br>Microsoft Windows WES7 user interface languages: U.S, Optional add-ons |
| **Keyboard language support** | U.S. English (standard), French, German, Spanish, U.K. English,<br>40 other languages included |
| **Protocol Support** | TCP/IP, DNS, DHCP, PXE |
| **Management** | Remote management, configuration, and upgrades through Dell Wyse Device Manager<br>Complete image upgrade<br>Wake terminal remotely (Wake-on LAN)<br>Terminal configuration (IP information, name, etc.)<br>Remote screen shadowing of entire desktop (Dell Wyse Remote Shadow)<br>Reporting, Asset management / SMS / Altiris<br>Native WEDM support for management via SCCM* |

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| **Wireless support** | 802.11 a/b/g/n** support with external wireless adapter or internal wireless adapter option<br>WPA-2, WEP, WPA wireless authentication<br>PEAP-GTC wireless authentication protocol with optional<br>Juniper Odyssey Client<br>Supports PC-Card wireless adapters from: Cisco, D-Link, Netgear,<br>US Robotics, Trendware** |
| **Plug-ins** | Adobe Flash Player / Adobe Shockwave<br>Microsoft Silverlight |
| **Dell Wyse TCX Suite** | Advanced support for innovative Dell Wyse TCX Suite of virtualization software that both works with and enhances ICA and RDP (instead of replacing them) featuring:<br>- Multimedia acceleration - the power to run rich multimedia files formats ultilizing Dell Wyse Collaborative Processing Architecture (CPA) that intelligently redirects the necessary processing tasks between the thin client and the server.<br>- Multi-display - ensures that windows and dialogue boxes behave the way users expect when using more than one monitor.<br>- USB Virtualization - makes thin client-attached USB devices visible to virtual desktops and applications, with full IT control.<br>- Bi-directional sound - enables virtual desktops and applications to receive and transmit high quality audio without compromise.<br>- Flash acceleration - helps users of thin clients to experience improved Flash performance. |
| **Dell Wyse Virtual Desktop** | Neutralizes the effects of network latency and packet loss, making 'thin' Accelerator more suitable for more remote-site, branch, or field-based users by boosting RDP and ICA up to 20 times on networks with latencies up to and exceeding 300ms and at least 768kbps bandwidth. |
| | *WES 2009 support for SCCM-WEDM will be available in April 2012<br>**requires hardware support |

# Software specifications Microsoft WES 7

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| **Firmware features** | Microsoft Windows Embedded Standard 7 (WES7)<br>Microsoft Internet Explorer 8.0 resident: HTML, JavaScript, XML, Citrix Web Interface<br>Microsoft RDP 6.1 client (Protocol 7.1 Supported) with RemoteFX technology<br>Citrix Online Plugin 12 resident (ICA 12) with HDX<br>Citrix XenDesktop<br>VMware View 4.6 client resident<br>Ericom PowerTerm InterConnect Terminal Emulation<br>Windows Media Player 12 |
| **Server OS Infrastructure support** | Citrix XenApp / Citrix Presentation Server<br>Citrix XenDesktop<br>VMware View<br>Microsoft Windows Terminal Server 2003 & 2008 R2<br>MSFT VDI |
| **Security** | File Based Write Filter (FBWF) |
| **Set-up and configuration** | Boot from local flash<br>Microsoft Windows WES7 user interface languages: U.S, Optional add-ons |
| **Keyboard language support** | U.S. English (standard), French, German, Spanish, U.K. English,<br>40 other languages included |
| **Protocol support** | TCP/IP, DNS, DHCP, PXE |
| **Management** | Auto-configuration with Dell Wyse Configuration Manager<br>Remote management, configuration, and upgrades through<br>Dell Wyse Device Manager<br>Complete image upgrade<br>Terminal configuration (IP information, name, etc.)<br>Reporting, Asset management<br>Simple USB imaging solution with Dell Wyse USB Firmware Tool<br>Native WEDM support for management via SCCM |

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| **Wireless support** | 802.11 a/b/g/n* support with external wireless adapter or internal wireless adapter option<br>WPA-2, WEP, WPA wireless authentication<br>PEAP-GTC wireless authentication protocol with optional Juniper Odyssey Client<br>Supports PC-Card wireless adapters* from: Cisco, D-Link, Netgear, US Robotics, Trendware |
| **Plug-ins** | Adobe Flash Player<br>Microsoft Silverlight |
| **Dell Wyse TCX Suite** | Advanced support for innovative Dell Wyse TCX Suite virtualization software that both works with and enhances ICA and RDP (instead of replacing them) featuring:<br>- Multimedia acceleration - the power to run rich multimedia files formats utilizing Dell Wyse Collaborative Processing Architecture (CPA) that intelligently redirects the necessary processing tasks between the thin client and the server.<br>- Multi-display - ensures that windows and dialogue boxes behave the way users expect when using more than one monitor.<br>- USB Virtualization - makes thin client-attached USB devices visible to virtual desktops and applications, with full IT control.<br>- Bi-directional sound - enables virtual desktops and applications to receive and transmit high quality audio without compromise.<br>- Flash acceleration - helps users of thin clients to experience improved Flash performance. |
| **Dell Wyse Virtual Desktop Accelerator** | Neutralizes the effects of network latency and packet loss, making 'thin' more suitable for more remote-site, branch, or field-based users by boosting RDP and ICA up to 20 times on networks with latencies up to and exceeding 300ms and at least 768kbps bandwidth. |
| | *requires hardware support |

# Software specifications Dell Wyse WSM

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| **Device hardware requirements** | Windows XP Pro<br>- Minimum processor speed 800 MHz (1GHz or higher is recommended)<br>- Mind. 256 MB (1GB or higher is recommended)<br>Vista and Windows 7<br>- Minimum processor speed 1 GHz (1.5GHz or higher is recommended)<br>- Mind. 1 GB (2GB or higher is recommended)<br>- Flash size/local storage – none needed. If the device has flash it can be used as a local cache for offline mode. |
| **Server requirements** | Minimum processor speed 1GHz (3GHz or higher is recommended).<br>Server Operating System: Windows XP Pro SP3, Windows Server 2003, Windows Server 2008 and 2008 R2 |
| **Network requirements** | Server Lan Speed = Minimum 100Mbps (1Gbps and up is recommended)<br>Device Lan Speed = Minimum 10Mbps (100 Mbps full duplex is recommended) |
| **Operating systems supported** | Microsoft Windows XP<br>Microsoft Windows Vista<br>Microsoft Windows 7 |
| **Databases supported** | Microsoft SQL 2005 and 2008 (Server and Express Editions) |
| **Built-in high availability** | - Database availability using SQL clustering.<br>- Built-in server high availability through WSM Server Grouping feature.<br>- Server to Server Fail-over Capability. |
| **Fast and easy installation** | - Installing Dell Wyse WSM is simply a matter of running a single, graphical installer.<br>- The installer checks for all the prerequisite components before installation. |

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| **Web-based admin console** | - Allows IT administrators to access Dell Wyse WSM from any browser.<br>- Control the entire installation from a central location.<br>- Dramatically simplifies administration, saving IT time and user downtime.<br>- Wizards to guide the user through specific tasks. |
| **Operation system and application imaging tools** | - Imaging tool simplifies the process of creating an OS image for the specific hardware configuration and an application image for all hardware configurations.<br>- All OS and application images are ready for deployment once created, no further modifications needed. |
| **Application subscription management** | Use flexible application deployment methods:<br>- Auto-subscribed applications are ready for use when user logs in for the first time.<br>- Manual subscriptions allow users the flexibility to use applications only when needed.<br>- Mandatory subscriptions that cannot be unsubscribed by users. |
| **Protected System Drive** | - Allows administrators to protect the system drive from end user initiated updates.<br>- Prevents changes to operating system drive except by administrators, helping stop viruses, spyware, or malware from infecting the device. |

# Software specifications Dell Wyse WSM (continued)

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| **Device hardware streaming** | - Dell Wyse WSM provides an on-demand operating system to Dell Wyse cloud PCs or diskless PCs on the network.<br>- Innovative technology makes each Dell Wyse cloud PC or diskless PC think there is a virtual hard disk attached to the device.<br>- Only those bits needed for the normal device operation are sent in order to reduce network traffic.<br>- Operating-system images can be shared across multiple devices, making management easier. |
| **Flexible boot options** | - Each device can boot from four operating system image assignments.<br>- Administrators can assign or let users choose which operating system they want to boot.<br>- First disk mode for the default OS image to boot from every time device starts up.<br>- First available mode to boot from the first responding server in order to balance loads. |
| **Application license management and metering** | - Dell Wyse WSM provides the infrastructure to collect information about the application license-usage across the enterprise. This information allows IT organizations to save money associated with application licenses.<br>- Licenses can be stored for all the applications deployed. It also enforces license compliance.<br>- Types of licenses that can be controlled include:<br>1) Time-based licenses (valid for X days).<br>2) Number of concurrent users. |

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| **Modes of operation** | Dell Wyse WSM allows administrators to choose modes of operation for the OS:<br>- Private Mode - for administration of operating system images.<br>- Shared Mode - has two additional modes of normal operation:<br>1) Volatile - returns desktop to pristine state after a device reboot.<br>2) Persistent - remembers any user settings after a device reboot. |
| **Remote servers for scalability** | - IT administrators can deploy multiple remote servers to improve scalability of the overall solution.<br>- Central management of remote servers allows easy deployment of the solution across different geographic locations. |
| **Comprehensive reporting** | - Easy ad-hoc reporting based on flexible parameters.<br>- Reports are delivered through HTML, giving you the flexibility to output in any form.<br>- License-metering reports can be used to make proactive purchasing decisions.<br>- License-audit reports can be used for compliance purposes. |
| **Desktop** | Dell Wyse WSM works with Dell Wyse C00LE, V00LE, R00L/E, Z00D and X00C family cloud PCs as well as with existing thin clients, diskless PCs and virtual-desktop systems. |

# Contact Dell Wyse


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DELL Wyse

Dell Wyse offers cloud client computing sales, service and support expertise around the globe. Click for contact details.

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# Dell Wyse Z class

## High performance

Fast processing. Accelerated graphics and multimedia. Fast and flexible user connectivity. Excellent energy-efficiency.

From the instant the new Dell Wyse Z class – the world's first self configuring windows-based Thin Client boots up – it delivers everything that today and tomorrow's users need in order to tackle the most demanding of virtual desktop environments.

At its heart beats the very latest single or dual core AMD G-Series Accelerated Processing Units or APUs, where all the processing, graphics and HD video tasks are performed on the same piece of silicon. Giving a dramatic leap in user experience and the ideal platform to reap the benefits of Dell Wyse cloud, Virtualization and Management software.

## High definition multimedia experience

Display, manipulate and work with stunning high definition multimedia graphics, voice and video in virtual desktop environments that are ready for Unified Communications. That's the promise the Dell Wyse Z class more than delivers on, with great performance across 2D, 3D and HD video applications. Its new design takes them all in its stride and is the first to include hardware accelerated DirectX® 11 graphics with OpenGL 4.0 and OpenCL™ support.

Throughout its long life span the Dell Wyse Z class has the least possible impact on working environments and energy consumption.

Its low energy processor out-performs other more power hungry alternatives, while minimal heat emissions permit a fan-less design that lowers power requirements. It all adds up to an advanced high performance Thin Client that's compliant with the Energy Star Version 5.0 Thin Client specification.

## At a glance

**Performance**
The AMD Embedded G-Series platform is the world's first low power processor and advanced GPU that's integrated into a single embedded Accelerated Processing Unit (APU).

**Connectivity**
Two SuperSpeed USB 3.0* ports, four USB 2.0 ports, Gigabit networking connectivity, optional single (A/B/G) and dual-band (N) WiFi.

**Dell Wyse Enhanced SUSE Linux**
Secure, flexible and market-leading Linux combined with Dell Wyse optimizations in management and user experience.

**Microsoft Windows Embedded Standard 2009 and 7**
Take advantage of fast, secure and reliable access to the power of Windows Embedded Standard.

**Thin client management**
Dell Wyse Device Manager supports Dell Wyse Z class with scalable enterprise-wide management including simple deployment, patching and updates and asset management – all with secure end-to-end encrypted communications.

**Dell Wyse WSM provisioning software**
Provides compact, energy efficient and productive 'Cloud PCs' with all the dynamic user experience of PCs – without their risks and complexities.

**Green**
Dell Wyse Z class thin clients use under 15 watts** in idle mode – less than the nearest rivals; saving critical carbon output and vital energy budgets. Energy Star Version 5.0 Thin Client specification.

## For when performance matters most

# Specification

Dell Wyse Z50S & Z50D, Z90SW & Z90DW, Z90S7, Z90D7 & Z90DE7 thin clients & Z00D cloud PC

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| **Processors** | AMD G-T52R 1.5 GHz Processor with AMD Radeon™ HD 6310 Graphics (not available for Z90DE7)<br>Dual core AMD G-T56N 1.65 GHz Processor with AMD Radeon™ HD 6320 Graphics |
| **Memory** | Z50S & Z50D 2GB Flash / 2GB RAM<br>Z90SW & Z90DW 2GB Flash / 2GB RAM<br>Z90S7 & Z90D7 4GB Flash / 2GB RAM<br>Z00D 0GB Flash / 2GB RAM<br>Z90DE7 4GB Flash / 2GB RAM<br>Expandable up to 32GB Flash / 4GB RAM |
| **I/O peripheral support** | One DisplayPort. (Optional DisplayPort to DVI-I adapter available)<br>One DVI-I port. DVI to VGA (DB-15) adapter included<br>Six total USB ports: Four USB 2.0 ports (two front, two rear) and<br>Two SuperSpeed USB 3.0* ports on rear (backwards compatible with USB 2.0)<br>Enhanced USB Keyboard with Windows Keys (104 keys) and PS/2 mouse port<br>PS/2 Optical mouse included Z90DE7: One PCIe 2.0 x4 slot with x16 expansion card,<br>half card length, full height.<br>Factory options: Legacy connectivity - adds 2 serial ports, 1 parallel port and 1 PS/2 keyboard port |
| **Networking** | 10/100/1000 Gigabit Ethernet<br>Factory options:<br>Dual Band 802.11 a/b/g/n Wireless<br>Fiber NIC network connectivity<br>Z90DE7: Integrated smart card reader |
| **Display** | VESA monitor support with Display Data Control (DDC) for automatic setting of resolution and refresh rate<br>DisplayPort: 2560x1600@32bpp<br>DVI-I: 1920x1200@32bpp<br>Dual display: 1920x1200@32bpp |
| **Audio** | Output: 1/8-inch mini jack, full 16 bit stereo, 48KHz sample rate,<br>Digital Audio Out, Internal Mono speaker<br>Input: 1/8-inch mini jack, 8 bit stereo microphone |
| **Physical characteristics** | Height: 7.87 inches (200mm), Z90DE7: 8.46 inches (215mm)<br>Width: 1.85 inches (47mm), Z90DE7: 2.72 inches (69mm)<br>Depth: 8.85 inches (225mm) |
| **Weight** | 2.47 lbs. (1.12kg), Z90DE7: 3.5 lbs. (1.59kg) |
| **Mountings** | Vertical feet standard / Horizontal feet optional<br>Optional VESA mounting bracket |
| **Device Security** | Built-in Kensington security slot (cable sold separately) |
| **Power** | Worldwide auto-sensing 100-240 VAC, 50/60 Hz. Energy Star V.5.0<br>Phase V external and EuP compliant power adapter. Average power usage with device<br>connected to 1 keyboard with 1 PS/2 mouse and 1 monitor: Under 15 Watts** |
| **Temperature Range** | Operating: 50° to 104° F (10° to 40° C), horizontal and vertical positions<br>Storage : 14° to 140° F (-10° to 60° C) |
| **Humidity** | 20% to 80% condensing. 10% to 95% non-condensing |
| **Safety Certifications** | German EKI-ITB 2000, ISO 9241-3/-8. cULus 60950, TÜV-GS, EN 60950<br>FCC Class B, CE, VCCI, C-Tick WEEE, RoHS Compliant<br>Energy Star & EPEAT Silver certified*** |
| **Warranty** | Three-year hardware warranty |

* Support for SuperSpeed USB 3.0 is currently not available in Dell Wyse SUSE Linux.
** Z90DE7 can use up to 35 watts with the expansion slot occupied and operational.
*** Z50S, Z50D and Z90DE7 EPEAT certification is pending.

**Learn more:** Contact Dell Wyse at sales@wyse.com or call 1-800-GET-WYSE

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